



AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for inducing differentiation of mammalian embryonic stem cells into functioning insulin-producing cells, which comprises the steps of:
 - 1) (A) culturing the mammalian embryonic stem cells together with feeder cells with a medium comprising leukemia inhibitory factor;
 - 2) (B) culturing the cells obtained from step 1)(A) in absence of feeder cells with a medium comprising leukemia Inhibitory factor and basic FGF in a suspension culture condition to give embryonic embryoid bodies;
 - 3) (C) culturing the obtained embryonic bodies with a selection-expanding medium; and
 - 4) (D) culturing the cells obtained cell clusters from step (C) with a differentiation medium to give functioning insulin producing cells.
2. (Currently Amended) The method of claim 1, wherein the medium used in step 2)(B) comprises about 100-10000 U/ml of leukemia inhibitory factor.
3. (Currently Amended) The method of claim 1, wherein the medium used in step 2)(B) comprises about 2-100 ng/ml of bFGF.
4. (Currently Amended) The method of claim 1, wherein the medium used in step 3)(C) comprises nicotinamide, insulin and fibronectine in a serum-free cell culture medium.
5. (Currently Amended) The method of claim 1, wherein the functioning insulin producing cells are insulin producing pancreatic islet-like cell clusters.

6. (Currently Amended) The method of claim 5 wherein the medium used in step 4)(D) comprises nicotinamide, insulin and laminin in a serum-free cell culture medium.
7. (Withdrawn) The method of claim 1, wherein the functioning cells are nerve-like cells.
8. (Withdrawn - Currently Amended) The method of claim 7, wherein the medium used in step 4)(D) comprises L-lysine, insulin and laminin in a serum-free cell culture medium.
9. (Currently Amended) ~~Functioning-The insulin producing~~ cells induced from mammalian ES cells by the method of claim 1.
10. (Currently Amended) ~~Insulin-The insulin~~ secreting cell clusters induced from mammalian ES cells by the method of claim 5.
11. (Withdrawn) Nerve-like cells induced from mammalian ES cells by the method of claim 7.
- 12-13. (Cancelled)
14. (Withdrawn) A method for treating a mammalian patient having disorders in nerve function, which comprises implanting nerve-like cells induced from allogenic ES cells by the method of claim 7 to the patient.